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Field Power Measurements of Imaging Equipment

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Abstract

According to the U.S. Department of Energy, electricity use by non-PC commercial office equipment is growing at an annual rate of nearly 5% (AEO 2003). To help address this growth in consumption, U.S. EPA periodically updates its ENERGY STAR specifications as products and markets change. This report presents background research conducted to help EPA update the ENERGY STAR specification for imaging equipment, which covers printers, fax machines, copiers, scanners, and multifunction devices (MFDs).

We first estimated the market impact of the current ENERGY STAR imaging specification, finding over 90% of the current market complies with the specification. We then analyzed a sample of typical new imaging products, including 11 faxes, 57 printers and 19 copiers/MFD. For these devices we metered power levels in the most common modes: active/ready/sleep/off, and recorded features that would most likely affect energy consumption. Our metering indicates that for many products and speed bins, current models consume substantially less power than the current specification. We also found that for all product categories, power consumption varied most considerably across technology (i.e. inkjet vs. laser). Although inkjet printers consumed less energy than laser printers in active, ready and sleep-mode, they consumed more power on average while off, mostly due to the use of external power supplies. Based on these findings, we developed strategies for the ENERGY STAR program to achieve additional energy reductions. Finally, we present an assessment of manufacturer's ENERGY STAR labeling practices.